

## The Limits of Claim Differentiation<sup>1</sup>

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The process of claim construction – determining the meaning of patent claims – is the most important part of patent litigation. Once patent claims are construed in a “*Markman* hearing,”<sup>3</sup> cases generally either settle or get resolved on summary judgment.<sup>4</sup> Not surprisingly, therefore, courts and commentators have paid a great deal of attention to both the process of claim construction and the interpretive sources courts can use to determine the meaning of patent claims.<sup>5</sup> Indeed, the Federal Circuit recently took the *Phillips v. AWH Corp.* case en banc in order to settle the much-debated question of when it is acceptable to rely on the text of the

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<sup>3</sup> So called because of the Supreme Court decision in *Markman v. Westview Instruments*, 517 U.S. 370 (1996), which held that claim construction was a question of law for the judge.

<sup>4</sup> For efforts to estimate settlement rates in patent cases, which are somewhere between 80% and 98% of all cases, see William M. Landes, *An Empirical Analysis of Intellectual Property Litigation: Some Initial Results*, 41 *Hous. L. Rev.* 749 (2004); Jay P. Kesan & Gwendolyn G. Ball, *How Are Patent Cases Resolved: An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84 *Wash. U. L.Q.* 247 (2006). There are only about 100 patent trials a year out of 3000 suits filed. For some evidence of the increase in summary judgment grants after *Markman*, particularly in favor of defendants, see John R. Allison & Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 *Stan. L. Rev.* 955 (2007).

<sup>5</sup> Among the many scholarly articles on claim construction, see, e.g., Symposium, *Markman Ten Years Later*, 9 *Lewis & Clark L. Rev.* 1 (2005); Joseph Scott Miller & James A. Hilsenteger, *The Proven Key: Roles and Rules for Dictionaries at the Patent Office and the Courts*, 54 *Am. U. L. Rev.* 829 (2005); Craig Allen Nard, *A Theory of Claim Interpretation*, 14 *Harv. J. L. & Tech.* 1 (2000); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 *U. Pa. L. Rev.* 1105 (2004); Ben Hattenbach, *Chickens, Eggs and Other Impediments to Escalating Reliance on Dictionaries in Patent Claim Construction*, 85 *J. Pat. & Trademark Off. Soc’y* 181, 182 (2003); Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 *Rutgers L.J.* 61 (2006).

patent, the prosecution history, dictionaries, and expert testimony in construing patent claims.<sup>6</sup>

Surprisingly, less attention has been paid to what might be called the *canons* of claim construction. There are a number of such rules that courts can use in applying the interpretive sources to reach an understanding of what patent claims mean. For example, courts are entitled to rely on the examples given in the specification to understand and interpret the meaning of claim language, but they may not use f examples to read new limitations into those claims.<sup>7</sup> Courts should generally not interpret a claim in a way that excludes the preferred embodiment.<sup>8</sup> Courts have also long applied a canon that patent claims should be construed to preserve their validity,<sup>9</sup> though that canon is in some disfavor today and will not be applied except in marginal cases.<sup>10</sup> There is even a “tie-breaker” canon that provides that if two alternative interpretations are equally plausible, the court will choose the narrower one in order to avoid unfair surprise to the public.<sup>11</sup>

The canon that has arguably had the most significant impact on claim construction, however, is the doctrine of claim differentiation, which has been used in 69 reported Federal Circuit decisions and many more district court opinions in the past nine years. That doctrine

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<sup>6</sup> Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Despite the court’s broad agreement on the hierarchy of interpretive sources, which focuses on the patent specification and the context of the invention at the time it was made, the court continues to disagree about the application of those rules to specific cases. Indeed, Hal Wegner has found that there are three times as many dissents in claim construction cases after *Phillips* as before. See [http://infringement.blogs.com/philip\\_brooks\\_patent\\_infr/2006/12/the\\_call\\_for\\_cl.html](http://infringement.blogs.com/philip_brooks_patent_infr/2006/12/the_call_for_cl.html) (discussing the study).

<sup>7</sup> See, e.g., *Renishaw PLC v. Marposs Societa’ Per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1999).

<sup>8</sup> *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1341 (Fed. Cir. 1999).

<sup>9</sup> *Modine Mfg. Co. v. United States Int’l Trade Comm’n*, 75 F.3d 1545 (Fed. Cir. 1996).

<sup>10</sup> *Phillips*, 415 F.3d at \_\_; *Rhine v. Casio, Inc.*, 183 F.3d 1342 (Fed. Cir. 1999).

<sup>11</sup> *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573 (Fed. Cir. 1996). Cf. *Northern Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d 1281 (Fed. Cir. 2000) (noting the limited nature of this tiebreaker rule).

relies on the fact that patent applicants almost always write multiple claims in an effort to get several different tries at capturing their invention in words.<sup>12</sup> Those multiple claims are often “nested,” with some broad claims that are likely to be infringed by defendants but also more likely to be invalid, and other narrower claims that cover less ground but for that reason are more likely to be valid. The claim differentiation doctrine in its broadest reading provides that no two claims in the same patent should be interpreted to cover the same thing.<sup>13</sup> The doctrine seems to flow from a parallel doctrine of statutory construction that rejects a construction of a statute that would render it redundant or superfluous, since presumably Congress wouldn’t have knowingly passed the same statute twice.<sup>14</sup> The logic is bolstered by the idea that because the Patent and Trademark Office (PTO) charges applicants a fee for each claim, and because drafting those claims requires attorney time for which clients must also pay, applicants wouldn’t waste their money by drafting two claims that meant exactly the same thing. As a result, an interpretation of a claim term that would render that claim redundant of another claim will be rejected.

The courts regularly apply this doctrine to proposed claim constructions, having done so hundreds of times in the last ten years alone.<sup>15</sup> As a general matter, applying the doctrine of

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<sup>12</sup> See John R. Allison & Mark A. Lemley, *Who’s Patenting What? An Empirical Exploration of Patent Prosecution*, 53 **Vand. L. Rev.** 2099, 2149 tbl. 5 (2000) (patents have 14.87 claims on average, and a median of 12 claims).

<sup>13</sup> See, e.g., *Ecolab, Inc. v. Paraclipse, Inc.*, 285 F.3d 1362 (Fed. Cir. 2002). This version is the one that seems to be applied in the PTO, for example. See 37 C.F.R. § 1.75(b) (“More than one claim may be presented provided they differ substantially from each other . . .”).

<sup>14</sup> The legal maxim is “*lex rejicit superflua, pugnancia, incongrua*” (“the law rejects superfluous, contradictory, and incongruous things”). **Francis Bennion, Statutory Interpretation** §316, at 776 (3d ed. 1997). For applications, see, e.g., *South Carolina v. Catawba Indian Tribe, Inc.*, 476 U.S. 498, 510 n.22 (1986) (“It is an “elementary canon of construction that a statute should be interpreted so as not to render one part inoperative.”); *Mackey v. Lanier Collection Agency & Service, Inc.*, 486 U.S. 825, 837 (1988) (“we are hesitant to adopt an interpretation of a congressional enactment which renders superfluous another portion of that same law”). *But see* Cal. Civ. Code § 3537 (“superfluity does not vitiate”).

<sup>15</sup> We analyzed 136 recent Federal Circuit and district court cases that dealt with the issue of claim

claim differentiation results in broader constructions of patent claims, because it is most commonly used to prevent defendants from limiting a broad genus claim to the range of embodiments actually disclosed or more explicitly recited in other claims. Sometimes this is the right result, because defendants are improperly seeking to limit broader genus claims to the preferred embodiments disclosed in the specification. But at other times it leads to problematic results. In *Phillips v. AWH*, for example, the Federal Circuit en banc held that the term “baffles” in a claim for a bulletproof prison wall could include metal supports oriented at 90 degrees to the wall, because a separate claim in the patent referred to baffles “projecting inwardly from the outer shell at angles tending to deflect projectiles that penetrate the outer shell.”<sup>16</sup> The court reasoned that since one claim specified that baffles projected at particular angles, the characteristic of projecting at such angles could not be inherent in the term “baffles” itself. The problem with this interpretation is that the point of a “baffle” in the invention was to stop bullets from penetrating the wall. As Judge Lourie’s dissent correctly observed, a metal support that is at right angles to the wall won’t stop any bullets, except perhaps those that happen to hit right at the point where the baffle hits the wall, and so doesn’t achieve the purpose of the invention.<sup>17</sup> The doctrine of claim differentiation led the court astray in this case.

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differentiation. Ten did not ultimately decide the merits of the claim differentiation question, leaving 126 cases. Of those, 90, or 71.4%, applied the doctrine in interpreting the claim; only 36 did not apply the doctrine.

We included all Federal Circuit cases dealing with claim differentiation between June 1998 and October 2006 and a sampling of district court cases between June 2000 and October 2006. For each year, we selected between 7-10 district court cases (though 15 for 2006, and only four cases for 2000) by going down the chronological order list retrieved by Westlaw using the term “claim differentiation”. We recognize the statistical limits of this selection method; we use it not to prove any fact about district court or Federal Circuit decisions but to get a flavor of the ways the claim differentiation doctrine has been used.

<sup>16</sup> *Phillips*, 415 F.3d at \_\_\_.

<sup>17</sup> *Id.* at 1329 (Lourie, J., dissenting).

The problem with the doctrine is that it proceeds from a false premise. It may be reasonable for courts to presume that Congress generally doesn't intend to pass redundant statutes.<sup>18</sup> But patents aren't like statutes. Patent applicants who draft multiple claims quite often *are* trying to be redundant. A patentee with 60 claims doesn't have 60 different inventions; indeed, patent law prevents an applicant from prosecuting different inventions in the same application.<sup>19</sup> Rather, patent applicants are frequently attempting to claim a single invention. They draft multiple claims because writing words to define ideas is an inherently difficult and uncertain process,<sup>20</sup> and taking multiple bites at the apple gives them a greater chance of succeeding in capturing their invention in words. This isn't always true – sometimes different patent claims cover broader or narrower ranges, in the “nesting” approach described above – but it is often and perhaps even generally true.

When a patentee takes multiple stabs at covering the same invention, the canon of claim differentiation is likely to lead us astray. If the patentee is using different words to try to mean the same thing, a rule that says that different words must always mean different things creates artificial differences, and accordingly means that at least one of the claims has likely been misinterpreted. It also leads to a fruitless search for gradations in meaning that simply may not exist. A recent patent dispute between Yahoo! and Google provides an example. Yahoo! holds a

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<sup>18</sup> Actually, I'm skeptical that this is always true. Legislators may well have incentives to pass redundant statutes. The statutory interpretation canon may have more to do with discouraging duplicative legislation than with accurately understanding what the legislature has done.

<sup>19</sup> 35 U.S.C. § 121.

<sup>20</sup> *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 731 (2002) (“Unfortunately, the nature of language makes it impossible to capture the essence of a thing in a patent application.”); Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 **Lewis & Clark L. Rev.** 29 (2005); Jim Bessen & Michael Meurer, *If You Can't Tell the Boundaries, It Ain't Property* (Working Paper [No.], 2006).

patent on the arrangement of search results based on the lister's willingness to pay per click.<sup>21</sup> Yahoo! sued Google for infringing that patent. Google argued that it did not order its ad results in the way required by the patent. The question in the case was how to interpret the claim language covering the ordering of search listings. Different claims variously covered ordering search listings "in accordance with" the amount bid (independent claim 1), in an order "determined using" bid amounts (independent claim 14), in a strict order of "ordinal rank value" from highest to lowest bid (claim 18, which depended from claim 14), "in an order corresponding to" the amount bid (independent claim 30), and once again in a strict order of "ordinal rank value" from highest to lowest bid (claim 46, which depended from claim 30). How is a court to make sense of these terms?<sup>22</sup> There seem two possibilities – a strict ordinal ranking from highest to lowest bid, and a more complex algorithm in which bid amount is one but only one factor in determining ranking. But there are at least four different terms describing the ordering: "in accordance with," "determined using," "corresponding to," and in strict "ordinal rank value." Trying to find four different ways in which bid amounts can affect the order of search listings seems futile; the terms simply don't mean four different things.

This problem is exacerbated by strategic claim drafting. Patent prosecutors aware of the doctrine of claim differentiation often differentiate claims not because they have different scope in mind for the claims, but because they know that the courts will apply the doctrine and therefore look after the fact for different (and hence likely broader) meanings for at least some of the claim terms. It is standard fare at patent CLE programs to encourage prosecutors to arbitrarily

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<sup>21</sup> U.S. Patent No. 6,269,361.

<sup>22</sup> Because the case settled before a *Markman* order, the court in that case did not have to resolve this issue.

choose different words in different claims for just this reason.<sup>23</sup> If patent lawyers are not actually seeking to differentiate claims, but instead using the claim differentiation doctrine to game the claim construction process, rote application of the canon simply plays into their hands.

Does this mean that we should abandon the doctrine of claim differentiation altogether? I think that would go too far. The canon sometimes gets it right, and helps sustain the otherwise difficult rule against importing limitations from the specification into the claim. Sometimes, but not always. Courts should recognize that claim differentiation is a canon that can sometimes help and sometimes hurt the process of determining the meaning of a claim.

It is not enough, of course, to say that courts should apply the doctrine only when it helps. Fortunately, I think there are a class of cases where claim differentiation is likely to do more good than harm. Those are the “nested” cases in which the patentee is attempting to create both broader and narrower claims. In the paragraphs that follow, I offer several guidelines that can help identify these nested claims and sort good from bad uses of the claim differentiation doctrine.

First, courts should not use the doctrine unless the claims in question are in an independent-dependent relationship. Dependent claims are necessarily narrower versions of an independent claim, since they include all the limitations of the independent claim and add new limitations. Patentees write dependent claims in order to differentiate the scope of their invention, so it will often make sense to use claim differentiation in that context. Indeed, an interpretation of an independent claim that renders it identical to a claim that depends from it would defeat the purpose of having a dependent claim. By contrast, if the claims are not in a

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<sup>23</sup> This was my experience in the “Strategic Prosecution” session at the University of Texas Advanced Patent Law Institute in October 2006, for example.

dependent relationship – if they are both independent, or if one depends not from the other but from a third claim not at issue – the superfluity rationale for claim differentiation loses much of its force. As an initial matter, therefore, it makes sense to limit the doctrine of claim differentiation to claims in a dependent relationship.

The data we analyzed suggest that courts have generally, but not always, been following this guidance. Of the 69 Federal Circuit cases we analyzed, 50 involved claim differentiation arguments based on an independent-dependent relationship, 15 involved arguments based on two independent claims, and 4 involved both. Notably, the Federal Circuit accepts the claim differentiation argument 80% of the time when the claims are in a dependent relationship, and rejects it more than half the time when they are not.

**Table 1**

**Relationship of Claims and Success of Differentiation Argument in the Fed Cir**

	<u>Accepted</u>	<u>Rejected</u>	<u>Did Not Decide</u>	<u>Total</u>
<u>Dependent</u>	36	9	5	50
<u>Independent</u>	6	9	0	15
<u>Both</u>	3	1	0	4
<u>Total</u>	45	19	5	69

Unfortunately, district courts have not been as clear in drawing this distinction, as Table 2 indicates.

**Table 2**

**Relationship of Claims and Success of Differentiation Argument in the District Courts**

	<u>Accepted</u>	<u>Rejected</u>	<u>Did Not Decide</u>	<u>Total</u>
<u>Dependent</u>	35	10	0	45



<u>Independent</u>	10	6	5	21
<u>Both</u>	1	0	0	1
<u>Total</u>	46	16	5	67

While district courts, like the Federal Circuit, heard claim differentiation arguments much more frequently in the dependent claim context, and were just as likely as the Federal Circuit to accept the argument in that context, they were more willing to accept claim differentiation arguments in the independent claim and mixed contexts as well. Given that the Federal Circuit recently issued the *Curtis-Wright* decision, containing an exposition of the reasons claim differentiation makes more sense in the dependent claim context,<sup>24</sup> there is reason to hope district courts will increasingly confine their claim differentiation analyses to the dependent claim context.

Second, nesting is far more likely with patent claims that differ in the ranges or group sizes they identify, rather than claims that differ merely in the descriptive words they choose. Obviously, two different numerical ranges will be interpreted differently; we don't need the claim differentiation doctrine to tell us that. But the same should be true where one claim defines a genus in terms of its characteristics and another specifies a numerical range. If claim 1 covers "large widgets" and claim 2 covers "the widgets of claim one that are at least two cubic meters in size," it is reasonable to infer that "large" in this context encompasses at least some embodiments that are less than two cubic meters.<sup>25</sup> By contrast, suppose that claim 1 covers "large widgets"

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<sup>24</sup> *Curtis-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1381 (Fed. Cir. 2006).

<sup>25</sup> Thus, in *Intamin v. Magnetar Tech*, 483 F.3d 1328 (Fed. Cir. 2007), the Federal Circuit held that where a dependent claim read "The braking device of claim 1 wherein said intermediary is non-magnetic," the reference to an "intermediary" in claim 1 must include both magnetic and non-magnetic intermediaries. *But cf.* *Pods v. Porta Stor*, 484 F.3d 1359 (Fed. Cir. 2007) (finding that an element of one claim referring to a "carrier frame" required that the frame have four sides, even though a separate claim specifically identified a carrier frame with four sides, because the specification consistently referred to carrier frames as having four sides).

and claim 2 covers “sizeable widgets.” The doctrine of claim differentiation would instruct us that “sizeable” must mean something different than “large.” But it is unlikely that the applicant intended any such gradation, particularly if the claims are not in a dependent relationship. Rather, it is more likely that the patentee is hedging her bets, choosing different words in case the meaning of one of them is unclear or is limited for some unforeseen reason.

Third, the superfluity rationale for the doctrine of claim differentiation applies only where the claims in question are identical except for the elements being differentiated. Only in such a case will interpreting one element to mean the same as another mean that the two claims end up having identical scope. Where the claims have other elements that differ, there is less reason to apply the doctrine of differentiation, since even interpreting two different terms identically will not lead to identical claim scope.

Finally, courts should temper the application of the canon of claim differentiation by checking the results of their claim interpretation against the context and likely scope of the invention. If the result of applying the canon of claim differentiation is to produce a result that is at odds with the purpose of the invention or the way it is described in the specification, that fact should raise red flags. Just as courts are reluctant to interpret a claim in a way that excludes the preferred embodiment, because doing so suggests that the interpretation was not what was intended, they should be reluctant to interpret a claim in a way that departs from the purpose or described scope of the invention. A failure to engage in such a reality check is what led to the odd result in *Phillips*, in which the patent was construed to cover walls that didn’t perform the function the patent intended them to. Once again, the language of *Curtiss-Wright* is salutary, and should give district courts guidance in applying this rule.<sup>26</sup>

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<sup>26</sup> *Id.* (“two considerations generally govern this claim construction tool when applied to two

The context/purpose rule shouldn't be absolute. Sometimes the only reasonable way to understand a claim is to read it to cover things that likely weren't contemplated by the inventor. This will happen where a patent applicant has intentionally gamed the doctrine by putting the broadest numerical range of its invention in a nested dependent claim, for example. In those cases, the law offers one final backstop – invalidity of the claim under the enablement or written description doctrines.<sup>27</sup> A claim that is ultimately interpreted to cover something the patentee didn't intend to cover at the time she filed her application will often be invalid for failure to teach a person having ordinary skill in the art (PHOSITA) how to make and use the invention.<sup>28</sup> Sometimes, however, a claim may be enabled even though it wasn't contemplated by the patentee, because the PHOSITA could have made and used the broader invention even though the patentee didn't in fact think of it. In this set of cases, the written description doctrine may step in. That doctrine requires proof that the patentee was in fact in possession of the invention at the time of filing.<sup>29</sup> While written description cases outside the DNA context have generally involved patentees who changed their claims after filing to cover something they did not possess as of the filing date, the doctrine has since been expanded to cover originally-filed claims outside of biotechnology,<sup>30</sup> and one could see the judicial expansion of the claim to cover scope unanticipated by the patentee as akin to the patentee's improper broadening of claims by amendment, in both cases resulting in invalidity of the broader claim.

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independent claims: (1) claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous; and (2) claim differentiation can not broaden claims beyond their correct scope.”).

<sup>27</sup> 35 U.S.C. § 112, ¶ 1.

<sup>28</sup> *Id.*

<sup>29</sup> *The Gentry Gallery, Inc. v. The Berkline Corp.*, 134 F.3d 1473 (Fed. Cir. 1998).

<sup>30</sup> *Lizardtech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336 (Fed. Cir. 2005).

I think the application of the written description doctrine should be a last resort. Properly cabined, claim differentiation shouldn't result in claims invalid because the patentee didn't possess the invention the court has now decided she claimed. A canon of claim construction that is not absolute, but sensitive to the context of the invention and the way in which the words in question interact, will help courts achieve the elusive goal of interpreting claims to give the patentee effective protection while avoiding gamesmanship and absurd results.